Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	IB Docket 04-286
WRC-15 Advisory Committee	)	

To: The Chief, International Bureau
Via: Office of the Secretary

COMMENTS ON RECOMMENDATIONS APPROVED BY THE ADVISORY COMMITTEE FOR THE 2015 WORLD RADIOCOMMUNICATION CONFERENCE

A recommendation to "channelize" the proposed expansion of the Amateur Radio 60 meter "band."

Regarding **IB Docket No. 04-286**, the WRC-15 Advisory Committee draft recommendations, I have some specific comments and recommendations regarding the proposed Amateur Radio allocation of 5275-5450 kHz (a 60 meter "band"), WAC/069(27.01.14).

I am Gary Pearce KN4AQ. I've been a licensed Radio Amateur since 1965. I currently hold an Amateur Extra Class license, and I've been active on the 60 meter band since the spectrum was approved for Amateur Radio use in the United States in 2002.

I enthusiastically approve of the expansion of a secondary Amateur Radio allocation in the 5 MHz area. This spectrum has proven to do what we expected it would – provide daytime coverage of regional territory that 80 and 40 meters could not reliably do on many days of the year. I note that the spectrum made available in the US and most other counties that authorized 60 meter Amateur Radio operation has been very limited. In the case of the United States, just 5 "channels," each wide enough for a single SSB transmission.

While the "channel" concept was initially foreign to radio amateurs, we learned some lessons from the experience. I have one specific recommendation that I think should be implemented at the WRC**. I recommend that whatever additional spectrum is allocated to Amateur Radio also be "channelized" internationally, and not be allocated as a traditional band simply with defined edges. I suggest this with the goal**

of reducing interference, both to the primary services, and among Radio Amateurs themselves. While this request may seem too detailed for a WRC action, I believe that if channelization is desirable, then to be successful is must be implemented and "harmonized" internationally, simply because radio signals don't respect borders. If Amateurs in one country are bound to channels, but those of another are not, or are on channels offset a kilohertz or two from their neighbor, interference will be guaranteed, not minimized. That incompatibility is actually the case with the frequencies currently authorized to radio amateurs around the world today.

Here is some brief background for my suggestion:

Experience with the current 5 channels has demonstrated the advantages of "channelized" operation that is routine in commercial, military and government HF operations, but have not been part of the Amateur Radio HF structure.

The primary advantage is near-elimination of what other services would call "adjacent channel interference." On other Amateur Radio bands, our "operate anywhere in the band" ability frequently results in stations operating less than 2.5 kHz apart, well within each other's receiver passbands. Nets and even emergency communications operations in particular suffer from reduced efficiency due to interference. Routine communications may not have an "efficiency" factor, but are disrupted as well. The interference is rarely deliberate, but it's a problem nevertheless.

Beyond channelization, the specifics of how to regulate the 60 meter allocation are probably best left to individual regional and national administrations. However, I'd like to put some additional recommendations on the record here. There is a difficult balance to strike between unnecessarily detailed regulation and workable, reasonably efficient operation. And again, radio signals do not heed borders, but I don't expect these points to become part of the ITU regulations.

Here are my specific proposals:

- **3 kHz channel "steps."** For typical SSB operation, this provides good adjacent-channel protection for all but the strongest signals. If the entire 175 kHz currently proposed is actually allocated, this would provide 58 channels of operation.
- **2.8 kHz bandwidth within the channel.** This is the current specification in the United States. It's a legacy of the spectrum routinely used by SSB, but can be flexible to accommodate other modes (see the next point).
- **Permit any analog or digital mode** that would fit within the 2.8 kHz bandwidth. These modes would include "phone," "data," "image" and any other use that may be developed, probably with the usual restriction of a "published code." While a mode like SSB would fill the channel, a new, digital voice mode like "FreeDV," which occupies just over 1 kHz of spectrum, could put two voice channels inside one RF channel.
- **Limit SSB operation to USB.** There is no advantage to using LSB as well, since it would have to occupy the same spectrum. It would not "add a channel", but would just add a layer of operational complexity.
- **Reserve 10% of the spectrum as a single "super-channel"** for narrow emission modes, CW, PSK31, etc., again using an "any mode, analog or digital, maximum bandwidth" model. I suggest something especially narrow, like 200 Hz. These signals could operate anywhere within the "super-channel." Unlike SSB operators, the narrow mode operators and technology (like "waterfall displays") have proven their ability to choose frequencies to minimize interference.

I expect this proposal will be popular with one segment of the Amateur Radio population (mostly drawn from hams who have experienced current 60 meter channelized operation), and very *unpopular* with another segment. The Radio Amateurs who oppose a channelized allocation should make their own arguments, but I'd like to anticipate a few of them.

I expect to see references to "freedom" and "tradition," both of which have led to the interference I discussed above, but have not yielded any particular benefit. They may

argue that it will obsolete some legacy equipment that could not maintain accurate frequency calibration and tolerances (our older "VFO" based equipment). But that equipment has been excluded from 60 meters already.

They may make the point that hams can voluntarily "channelize" the way we did on VHF/UHF FM. That's very unlikely on HF. VHF FM channelization was forced on hams by both the available equipment (crystal-controlled, surplus commercial equipment) and the fixed-frequency nature of repeaters. The VHF FM operators quickly recognized the value in coordinated, channelized operation, but those values never migrated to HF operation. Indeed, the HF-oriented population derided the new FM operators for being channelized and "too much like CB." Even in the early HF era when crystal control of transmit frequency was preferred over unstable VFO operation, hams never actually created channels, but merely operated on random frequencies dictated by the crystals they obtained.

They may make the point that hams routinely operate on predetermined frequencies for nets and other, regularly occurring activities. And this is true, but those predetermined frequencies are for the most part uncoordinated with the rest of the Amateur Radio community, and are often chosen despite the fact that they put two routine operations on frequencies less than 3 kHz apart (and as close as 1 kHz apart), guaranteeing interference. Again, HF hams have rarely demonstrated the ability to mitigate interference with voluntary frequency restriction. The closest we come is agreeing to set aside certain band segments for specific purposes. Some of them are: DX; selected modes like PSK31, RTTY, SSTV, AM phone; low-power operation (QRP); beacons; automatically controlled data stations. But most hams couldn't tell you what these specific frequencies or band segments are unless they are fans of the specific mode or activity.

Finally, they might point out that contests and "DX pileups" are essentially free-for-alls, where stations crowd the spectrum attempting to be noticed. Interference in these circumstances is more than tolerated, it's expected, at least during the "competition" phase of operation. Once a single station has been chosen to complete a contact, others wait until a contact is completed before the bedlam resumes. Rigid channelization would

make this activity less… well, “efficient” isn’t much of an operative concept here, but it will have to do.

And I agree, this is a fine, old Amateur Radio tradition. My rebuttal is that we don’t need it on 60 meters. First, we do have an agreement among hams and the organizations that plan our contests to avoid the 12, 17, 30 and 60 meter bands. That leaves hams a few options for bedlam-free operation during the popular contests. When we chase DX on 60, we just might discover a more frequency-conserving option to the ever-expanding scrum adjacent to a rare DX station: “I’ll be listening only on channels 7, 8 and 9!”

Thank you for considering my position on this issue!

73, Gary KN4AQ

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